

attach 8

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SEQUENCE LISTING

<110> Donovan, Stephen

<120> CLOSTRIDIAL TOXIN DERIVATIVES AND METHODS FOR TREATING PAIN

<130> botulinum-subP/pain/D2875

<140> 09/489,667

<141> 2000-01-19

<160> 14

<170> PatentIn Ver. 2.1

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<211> 11

<212> PRT

<213> Unknown Organism

<220>

<221> MOD\_RES

<222> (11)

<223> AMIDATION

<220>

<223> Description of Unknown Organism: This fragment is substance P and is very well known in the art.

<220>

<223> The Met at position 11 is Met-amide.

<300>

<310> 08/631,434

<311> 1996-04-12

<312> 1999-04-06

<400> 1

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met  
1 5 10

<210> 2

<211> 12

<212> PRT

<213> Unknown Organism

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<220>

<223> Description of Unknown Organism: Precursor to substance P, which is very well known in the art.

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<311> 1996-04-12

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<300>

<301> Shimonaka,  
et al.,

<303> J. Neurochem.

<304> 59

<306> 81-92

<307> Jul-1992

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Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly  
1 5 10

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<212> PRT

<213> Unknown Organism

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<223> Description of Unknown Organism: This fragment is a precursor to substance P and is very well known in the art.

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<311> 1996-04-12

<312> 1999-04-06

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<301> Shimonaka,  
et al.,

<303> J. Neurochem.

<304> 59

<306> 81-92

<307> Jul-1992

<400> 3

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly Lys  
1 5 10

<210> 4

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<212> PRT

<213> Unknown Organism

<220>

<223> Description of Unknown Organism: This fragment is a precursor to substance P and is very well known in the art.

<300>

<310> 08/631,434

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<303> J. Neurochem.

<304> 59

<306> 81-92

<307> Jul-1992

<400> 4

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly Lys Arg  
1 5 10

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<211> 12

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: This fragment is a carboxy-ester synthetic precursor to substance P.

<220>

<223> The Gly at the carboxy terminal (Gly at position 12) is methylated.

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<311> 1996-04-12

<312> 1999-04-06

<300>

<301> Lee,  
et al.,

<303> Eur. J. Biochem.

<304> 114

<306> 315-327

<307> Feb-1981

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<301> Pernow, B.

<303> Pharmacol. Rev.

<304> 35

<306> 86-138

<307> Jun-1983

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<301> Regoli,  
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<306> 290-295

<307> Aug-1988

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Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly

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<210> 6

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<223> Description of Artificial Sequence: This is a  
carboxy ester synthetic precursor to substance P.

<220>

<223> The Lys at the carboxy-terminus (Lys at position  
13) is methylated.

<300>

<310> 08/631,434

<311> 1996-04-12  
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<301> Lee,  
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<303> Eur. J. Biochem.  
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<306> 315-327  
<307> Feb-1981

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<303> Pharmacol. Rev.  
<304> 35  
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<307> Jun-1983

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<303> TIPS  
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<307> Aug-1988

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<220>  
<223> The Arg at the carboxy-terminus (Arg at position  
14) is methylated.

<300>  
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<306> 315-327

<307> Feb-1981

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<303> Pharmacol. Rev.

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<303> TIPS

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<307> Aug-1988

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Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly Lys Arg  
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<213> Artificial Sequence

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<220>

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12) is ethylated.

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<310> 08/631,434

<311> 1996-04-12

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<307> Feb-1981

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Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly  
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<220>  
<223> The Lys at the carboxy terminal (Lys at position  
13) is ethylated.

<300>  
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<306> 86-138  
<307> Jun-1983

<300>  
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<303> TIPS  
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<306> 290-295  
<307> Aug-1988

<400> 9  
Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly Lys  
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<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: This is a  
carboxy ester synthetic precursor to substance P.

<220>  
<223> The Arg at the carboxy terminal (Arg at position  
14) is ethylated.

<300>  
<310> 08/631,434  
<311> 1996-04-12  
<312> 1999-04-06

<300>



<301> Lee,  
et al.,  
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<307> Feb-1981

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<303> Pharmacol. Rev.  
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<306> 86-138  
<307> Jun-1983

<300>  
<301> Regoli,  
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<303> TIPS  
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<306> 290-295  
<307> Aug-1988

<400> 10  
Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Gly Lys Arg  
1 5 10

<210> 11  
<211> 4  
<212> PRT  
<213> Unknown Organism

<220>  
<223> This sequence is made up by the first four amino  
acids of substance P.

<220>  
<223> Description of Unknown Organism: This is a  
naturally occurring amino terminal peptide fragment  
derived from substance P.

<300>  
<310> 08/631,434  
<311> 1996-04-12  
<312> 1999-04-06

<300>

<301> Stewart,  
et al.,  
<303> Nature  
<304> 262  
<306> 784-785  
<307> 1976-08-26

<300>  
<301> Skilling,  
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<303> J. Neurosci.  
<304> 10  
<306> 309-1318  
<307> Apr-1990

<400> 11  
Arg Pro Lys Pro  
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<210> 12  
<211> 7  
<212> PRT  
<213> Unknown Organism

<220>  
<223> Description of Unknown Organism: This is a  
naturally occurring amino terminal peptide fragment  
derived from substance P.

<220>  
<223> This fragment is made up of the first seven amino  
acids of substance P.

<300>  
<310> 08/631,434  
<311> 1996-04-12  
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<301> Stewart,  
et al.,  
<303> Nature  
<304> 262  
<306> 784-785  
<307> 1976-08-26

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et al.,  
<303> J. Neurosci.  
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<306> 309-1318  
<307> Apr-1990

<300>  
<301> Lavielle,  
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<303> Biochem. Pharmacol.  
<304> 37  
<306> 41-  
<307> 1988-01-1

<400> 12  
Arg Pro Lys Pro Gln Gln Phe  
1 5

<210> 13  
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<212> PRT  
<213> Unknown Organism

<220>  
<223> Description of Unknown Organism: This is a  
naturally occurring amino terminal peptide fragment  
derived from substance P.

<220>  
<223> This fragment is made up of the first nine amino  
acids of substance P.

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<306> 784-785  
<307> 1976-08-26

<300>

<301> Skilling,  
et al.,

<303> J. Neurosci.

<304> 10

<306> 309-1318

<307> APR-1990

<400> 13

Arg Pro Lys Pro Gln Gln Phe Phe Gly

1

5

<210> 14

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: This is an  
analog of substance P. This analog contains  
disulfide Cys-Cys bridges.

<220>

<223> The Cys at position 3 bridges with the Cys at  
position 6.

<220>

<221> MOD\_RES

<222> (11)

<223> AMIDATION

<220>

<223> The Met at position 11 is Met-amide.

<300>

<310> 08/631,434

<311> 1996-04-12

<312> 1999-04-06

<300>

<301> Lavielle,  
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<303> Biochem. Pharmacol.

<304> 37

<306> 41-

<307> 1988-01-1

<300>

<301> Quirion, R.  
Dam, T.V.

<303> Regulatory Peptides

<304> 22

<306> 18-

<307> 1988-07-20

<400> 14

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